

Transformation office looking for service partner

OFT TO PAIR LASER WITH RELAY MIRROR FOR REDIRECTED ENERGY INITIATIVE

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The Pentagon's Office of Force Transformation wants to combine relay mirrors with a 15- to 25-kilowatt laser to produce a redirected energy weapon that would not suffer line-of-sight limitations and could hit targets quickly with minimal collateral damage, according to Air Force Col. Jack Forsythe, an OFT strategist.

Through its Tactical Redirected Energy initiative, OFT foresees placing a laser in a transportable container, such as a "connex box," while the tactical relay mirror would be integrated on a unmanned aerial vehicle or aerostat balloon, the colonel told *Inside the Army* in a recent interview.

In theater, the connex box would be placed in a protected area, such as the Green Zone in Iraq, while the air vehicle circles above. Once a target is spotted, the laser would aim for the hovering platform, then the mirror would re-establish the beam toward the target, he said.

OFT has been working with the Air Force Research Lab to develop the tactical relay mirror portion of the initiative. OFT invested \$4 million in fiscal year 2005 for the development of the technology and is looking to invest additional money in the coming year, according to Forsythe. However, the office estimates that it will cost \$50 million to complete the development of the tactical relay mirror -- money OFT does not have.

Therefore, the office is looking for a service partner interested in using the system to help with funding. The Army and the Marine Corps would stand to benefit the most from the technology, Forsythe said.

"For the immediate fight -- in this war against individuals and doing stability operations in Baghdad -- the ground commander would really benefit from this," he said.

Initial investments in the project are expected to yield "build-to-print" designs for the tactical mirror relay system in January 2006. They will consist of plans to put the palletized tactical mirror relay system on a Predator B UAV or aerostat balloon, as well develop an operator console with the software this person would need to use in an engagement.

Only the Predator B and aerostat are being considered to sport the tactical relay mirror system due to the predicted 800- to 1,000-pound weight of the system.

Meanwhile, OFT is also looking to gain warfighter support for solid-state lasers through several 15 kW to 25 kW demonstrations slated to take place in the coming months, according to Forsythe. Much of effort on the solid-state laser front has been geared toward developing a 100 kW device for the Defense Department that would be capable of shooting down such targets as cruise missiles.

Still, OFT is looking to develop near-term laser capabilities, in the lower power range, to hit targets.

In its FY-06 budget request, the Bush administration proposes millions of dollars for a 100 kW solid-state laser technology in various budget lines, including money for applied research and advanced technology development (*Inside the Army*, May 9, p12).

More specifically, under the applied research budget line, the Army is expected to put \$22 million in FY-06 and FY-07 funding toward an solid-state laser “weapons system demonstrator,” according to budget justification material the Army sent Congress in February.

The FY-06 money would be used to initiate trade studies and detailed system engineering designs with Joint High Power SSL Phase II contractors for a solid-state laser weapon system compatible with tactical ground vehicle requirements, according to the documents. The following year, funding would support examining the capabilities of existing air defense target acquisition and procuring long-lead items for the 100 kW laser weapon system development, among other activities.

Meanwhile, in the advanced technology development budget line, \$120 million for a high-energy laser technology demonstration is spread out between FY-06 and FY-11.

This effort is aimed at developing a mobile 100 kW class solid-state laser weapon demonstrator that will comply to the form, fit and function requirements of the Future Combat System, according to the documents.

“At weapon system power levels of greater than 100 kW, SSL technology has the potential to enhance” FCS, the Army told Congress.

This solid-state laser technology effort addresses technical issues that include high-power output from compact and more efficient lasers; precision optical pointing and tracking; laser effects degradation due to atmosphere effects; lethality against a variety of targets; and effectiveness against low-cost laser countermeasures.

“Out of some of these programs, there will be one or two [for which] we can say: ‘We can get this laser from a lab laser to a ground based laser . . . in two to three years,’” Forsythe said. – *Ashley Roque*

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